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**The *Scalarinum* Species Complex (*Umbonis*)
in the Genus *Cerion***

By WILLIAM J. CLENCH AND C. G. AGUAYO

The present study covers only a few species in this remarkable genus. Members of this complex constitute the subgenus *Umbonis* Maynard and represent a divergent element, rather strikingly different from other members of the genus *Cerion*. So far as now known, they occur on the north coast of Cuba and on a few of the islands composing the Bahama Archipelago.

The origin of the species in this subgenus was probably the coastal area of Oriente in eastern Cuba. From here they spread west to Pinar del Rio and north into the Bahamas. Their distribution is sporadic and in many cases there are wide areas between species. The habitat they occupy is a precarious one, the upper strand line in the scrub growth, particularly among sea grapes and other associated plants. Their distribution is probably entirely by hurricanes or other severe storms, either by drift or even possibly on wind-blown debris. Similarly to other mollusks that live in this general environment, when established they may flourish for a shorter or longer period of time and subsequently be destroyed by storms. Debris from such a storm may move many miles along a coast or even out to sea, later to be cast ashore elsewhere. *Cerion*, drifting with this debris, may become established in a new area.

We are indebted to Dr. H. A. Rehder for the loan of material from Great and Little Inagua Islands, Bahama Islands.

Genus *Cerion* Röding

Cerion Röding 1798, Museum Boltenianum, p. 90.

Subgenus **Umbonis** *Maynard*

Umbonis Maynard 1896, Contributions to Science, Newtonville, Massachusetts **3**, no. 1, p. 28.

Subgenotype, *Strophia scalarina* Pfeiffer and Gundlach, monotypic.

Shells usually more or less tapering from the fourth whorl above the aperture to the apex. Umbilicus rimately formed and usually very shallow. Sculpture consisting of rather irregular, strong to weak, axial costae with spiral sculpture of numerous incised lines which cut into the shell in many cases even over the axial costae. Many members of this complex agglutinate small grains of calcareous sand to areas on the outside of the shell, especially in the umbilical region. Live specimens in many of the species possess exceedingly fine powdery or scale-like sculpture which is most apparent on the later whorls and along the margins of the incised lines.

Cerion (Umbonis) scalarinum *Pfeiffer and Gundlach*
Plate 51, fig. 3-4

Pupa scalarina Pfeiffer and Gundlach 1860, Malakozoologische Blätter **7**, p. 19 (Gibara, Cuba); Pfeiffer 1867, Novitates Conchologicae **3**, p. 367, pl. 84, fig. 16-17.

Cerion scalarinum Pfeiffer and Gundlach, Pilsbry 1902, Manual of Conchology (2) **14**, p. 223, pl. 29, fig. 65-66.

Description. Shell about 25 mm. in length (1 inch), rimately perforate, attenuate, with a tapering spire, rather light in structure and very strongly sculptured. Color a dull gray, the axial costae being the same color. Whorls 10, moderately convex, the nuclear whorls opaque, somewhat glass-like in appearance and very faintly axially costate. Spire extended, forming an angle of 20° to 25°, usually tapering slightly from the body whorl to the summit. Occasional specimens not tapering before the fourth whorl above the aperture. Aperture subquadrate to subovate. Outer lip reflected and slightly thickened. Parietal ridge strongly developed, making the aperture holostomatous. Parietal tooth small, short and centrally located. Columellar tooth small, centered and extending within for a full whorl. Columella short and slightly arched into the parietal area and the base of the aperture. Umbilicus rimate, small

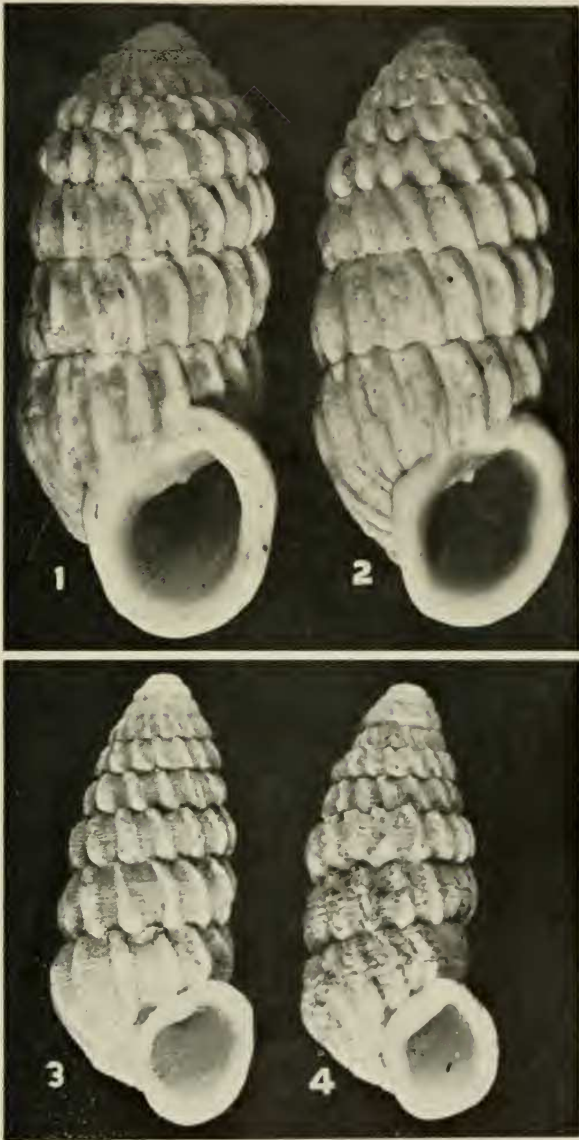


Plate 51

Fig. 1-2. *Cerion scalarinum sucyrasi* Pilsbry and Vanatta, west side of Bahía de Samá, Banes, Cuba (3½x). Fig. 3-4. *Cerion scalarinum* Gundlach. Punta Barril, Gibara, Cuba (3½x).

and very shallow. Suture moderately impressed. Sculpture consisting of numerous, somewhat irregular, robust, axial costae which number 12 to 15 on the body whorl. Spiral sculpture consisting of numerous deeply incised lines or threads which are cut into the shell, even over the axial costae. On live shells the surface is usually powdered with an exceedingly fine element of shell structure which lines up along the incised lines. In addition there are numerous, fine grains of shell sand which are cemented to the shell. Dead and worn shells are generally destitute of the agglutinated grains of sand.

length	width	whorls	
24.6	9.4 mm.	11½	Gibara, Cuba
25	11	10½	“ “
24	9.9	12	“ “

Types. At this writing the whereabouts of Pfeiffer's types is unknown. They were presumed to be in Stetten, Germany until the war in 1945. The type locality is Gibara, Oriente, Cuba.

Remarks. This species was fairly abundant near Gibara during the early days of Gundlach's trip but it has since become very rare at this locality. Probably much of the vegetation near the town had been destroyed rather early.

The spire tapers from the body whorl to form a rather acute apex.

Records. Gibara; N.W. of Gibara; Punta Barril, 1 km. N. of Gibara and Punta Goicuria, 8½ km. N.W. of Gibara.

***Cerion scalarinum sueyrasi* Pilsbry and Vanatta**

Plate 51, fig. 1-2

Cerion sueyrasi 'Blanes' Pilsbry and Vanatta 1898 [1899], Proc. Acad. Nat. Sciences, Philadelphia, p. 477, text fig. 6 (Port of Vita, Cuba); Pilsbry 1902, Manual of Conchology (2) 14, p. 222, pl. 29, fig. 68.

Description. Shell reaching about 26 mm. (1 inch) in length, rather solid, rimately perforate and strongly sculptured. Color a dull gray including the axial costae, occasional specimens blotched with brown. Whorls 10 to 10½, slightly convex, Nuclear whorls very finely costate. Spire extended, the cone tapering from the fourth whorl above the aperture, the angle pro-

duced at about 65° . Aperture subovate. Outer lip well-reflected and thickened. Parietal ridge well-developed, making the aperture holostomatous. Parietal tooth centered and well-developed. Columellar tooth small and extending within for nearly a whorl. Columella short. Umbilicus rimately produced and generally quite shallow. Suture moderately impressed. Sculpture consisting of numerous somewhat irregular, strongly developed axial costae with 15 to 18 on the body whorl. Spiral sculpture consisting of numerous and fine incised lines which cut into the shell even over the costae.

length	width	whorls	
26.3	10 mm.	$10\frac{1}{2}$	Bahía de Samá, Cuba
23.5	12	10	" " " "
23.6	10.8	10	" " " "

Types. Holotype in the Academy of Natural Sciences, Philadelphia from the Port of Vita, Cuba, collected originally by F. E. Blanes.

Remarks. This species is stouter than *scalarinum*, the summit tapering from 4 to 5 whorls above the aperture.

At Bahía de Samá we found this species rather rare. They ascend the trees to a height of about 8 feet, seldom more than 4 to 5 specimens on any one tree.

Records. CUBA: Port of Vita (Pilsbry); Puerto de Samá; west side of Bahía de Samá (both C. G. Aguayo, W. J. Clench and A. Quiñones); La Caletica, Puerto Samá; Punta de Manglito, Península del Ramon, Antilla (both Quiñones).

***Cerion (Umbonis) victor* Torre**

Plate 52, fig. 1-2

Cerion victor Torre 1929, *Nautilus* **42**, no. 3, pl. 4, fig. 12-13 [no description] (Caleta de Ovando, Oriente, Cuba).

Description. Shell extended, reaching 30 mm. (about $1\frac{1}{4}$ inch) in length, rimately umbilicate and coarsely sculptured. Color a dull gray. Whorls 10 to $12\frac{1}{2}$ and moderately convex. Spire attenuate and tapering from the body whorl to form an acute cone. The spire is produced at an angle of 22° to 25° . Aperture subcircular. Lip expanded and reflected but not turned back. It is attached on the parietal area but generally built

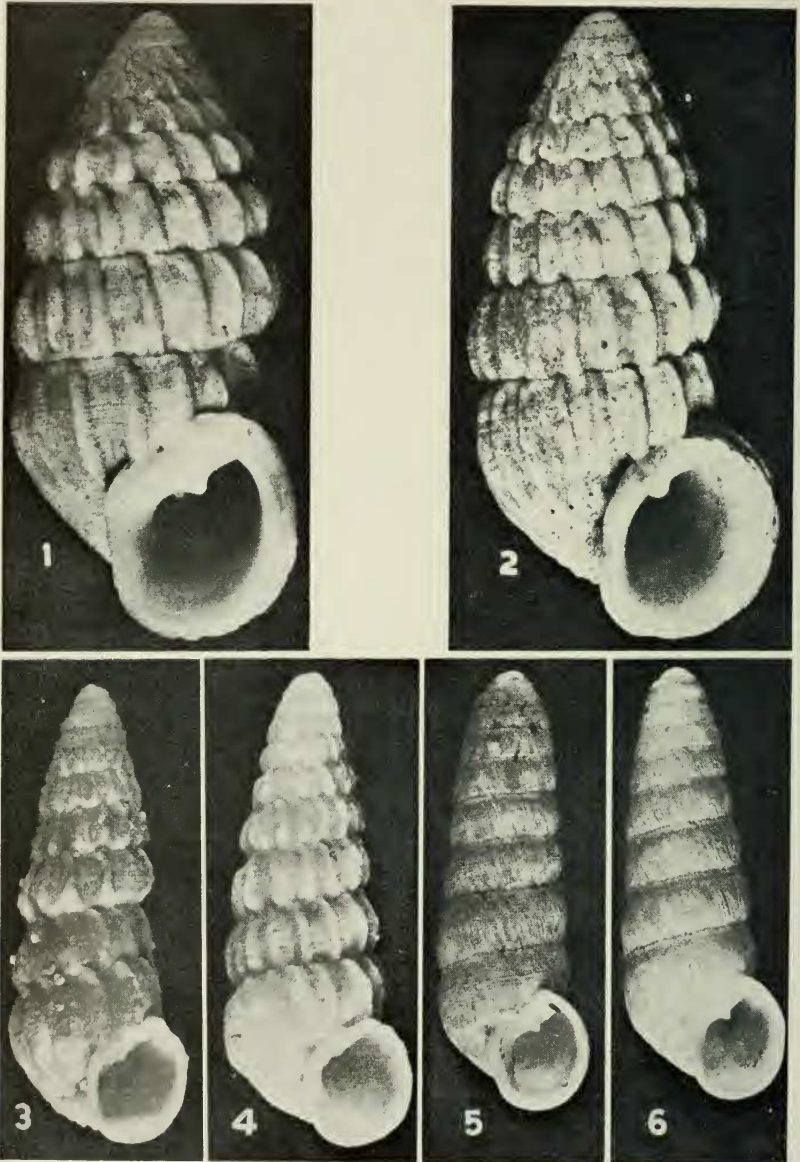


Plate 52

Fig. 1-2. *Cerion victor* Torre, Caleta de Ovando, Baracoa, Cuba, paratypes ($3\frac{1}{2}x$). Fig. 3-4. *Cerion acuticostatum* Sanchez Roig, north coast of Cayo Mégano Grande, Camagüey, Cuba, paratypes ($3\frac{1}{2}x$). Fig. 5-6. *Cerion palmeri* Sanchez Roig, Cayo Romano, Camagüey, Cuba, paratypes ($3\frac{1}{2}x$).

forward enough to make the aperture holostomatous. Columella short. Parietal tooth centered, rather prominent and extending back for less than $\frac{1}{4}$ whorl. Columellar tooth small and weak, extending back for nearly $\frac{1}{2}$ whorl. Columella short and somewhat arched. Umbilicus rimately formed and shallow, extending within hardly more than $\frac{1}{2}$ whorl. Suture well defined but only slightly indented. Sculpture consisting of numerous and well-developed axial costae numbering 10 to 13 on the body whorl. Spiral sculpture consisting of numerous incised lines which pass over the axial costae. Surface with the peculiar powder-like element. Agglutinated sand grains rare.

length	width	whorls	
30	11 mm.	12	Paratype
28.2	10.3	12 $\frac{1}{2}$	"
27.2	10.5	11 $\frac{1}{2}$	"

Types. Paratype specimens are in the Museo Poey, Museum of Comparative Zoölogy no. 128975 and 181757, and in the Academy of Natural Sciences, Philadelphia from Caleta de Ovando, Maisí, Baracoa, Cuba. Additional paratypes are in the Museo Poey and the Museum of Comparative Zoölogy from La Gata, Punta Negra, Maisí and Los Indios, Maisí, all in the immediate vicinity of the Caleta de Ovando, from the C. de la Torre collection.

The holotype was not indicated by de la Torre but is here selected to be the specimen figured as no. 13, plate 4, *Nautilus* **42**, 1929, now in the collection of the Academy of Natural Sciences, Philadelphia.

Remarks. This species is closely related to *C. scalarinum*, differing mainly in being larger and tapering more acutely.

***Cerion (Umbonis) johnsoni* Pilsbry and Vanatta**
Plate 55, fig. 1-2

Cerion (Maynardia) johnsoni Pilsbry and Vanatta 1895, Proc. Acad. Natural Sciences, Philadelphia **47**, p. 207 (locality unknown).

Cerion faxoni Maynard 1896, Contributions to Science, Newtonville, Massachusetts **3**, p. 32, pl. 7, fig. 1-2 (Cuba).

Cerion johnsoni Pilsbry and Vanatta 1896, Proc. Acad. Natural Sciences, Philadelphia **48**, p. 322, pl. 11, fig. 30 (Cuba); Pilsbry 1902, Manual of Conchology (2) **14**, p. 223, pl. 29, fig. 69-70.

Description. Shell attenuate, acute, reaching 38 mm. ($1\frac{1}{2}$ inches) in length, rather strong, rimately perforate and heavily sculptured. Color a dull grayish-white. Whorls 12 to 13, strongly convex. First two nuclear whorls smooth, third whorl finely costate, the costae being far more numerous than on the later whorls. Spire attenuate and acute, forming an angle of 30° to 40° . Aperture subovate. Parietal wall with a well-developed and well-formed tooth. Columellar tooth very small and weakly defined. Palatal lip expanded and slightly reflected. Columella short and nearly straight. Umbilicus rimate with but an exceedingly small perforation. Suture deeply indented. Sculpture consisting of well-developed axial costae numbering 11 to 12 on the body whorl. In addition, there are numerous fine, spiral, incised lines that are irregularly spaced. On fresh specimens, these lines may be filled with a fine shelly scale or powdery element, a character commonly observed in this species complex.

length	width	whorls	
29	14 mm.	12	Cueva del Chivo, Mariel, Cuba
37.2	16	12	" " " " "
39	14	$12\frac{1}{2}$	" " " " "
33	12.5	13	$1\frac{1}{2}$ miles E. of the lighthouse, Mariel, Cuba
31	10.9	$12\frac{1}{2}$	" " " " " " " "
30.5	11.5	$12\frac{1}{2}$	" " " " " " " "
32	11	$11\frac{1}{2}$	Holotype of <i>johnsoni</i>
29	11.5	11	Holotype of <i>faxoni</i>

Types. The holotype of *Cerion johnsoni* Pilsbry and Vanatta is in the Academy of Natural Sciences, Philadelphia. A series of three specimens was received by the Museum of Comparative Zoölogy several years ago from the Boston Society of Natural History, originally from Mr. Johnson and probably from the original lot. The holotype of *Cerion faxoni* Maynard is in the Museum of Comparative Zoölogy, no. 184649, and a single paratype, no. 10363. The original locality for *johnsoni* was unknown, then later it was given as Cuba. We here limit the type locality to the coastal area $1\frac{1}{2}$ miles east of the lighthouse at Mariel, Cuba. Specimens from this locality approximate the size and shape of the original specimens of *johnsoni* and *faxoni*.

Remarks. There seems to be little question that *johnsoni* Pilsbry and *faxoni* Maynard are the same species and very probably from the same original lot of material.

This species lives mainly in open and rather exposed places on the low vegetation growing among rocks just above and beyond the high tide area. Occasionally a few specimens work back into the higher scrub growth and the sea grape area.

It is very possible that the type specimens were collected in Habana from sand originally from the Mariel region. Sand for building purposes is a rare commodity in Cuba and much of it is gleaned from the upper strand line along the Cuban coast. Consequently, much *Cerion* territory is being destroyed in the vicinity of small towns and at a considerable distance from the large coastal cities of Cuba. Areas much nearer the lighthouse from which we collected *C. johnsoni* 20 years ago are now destroyed and this form has nearly disappeared from this region. However, a rather vigorous colony still occurs on the west side of the Rio Mosquito, in an area of fair extent, sea grape covered and with much coral rock.

***Cerion (Umbonis) acuticostatum* Sanchez Roig**

Plate 52, fig. 3-4

Cerion scalarinum acuticostatum Sanchez Roig 1948, Revista de la Sociedad Malacologica "Carlos de la Torre" **6**, p. 68, pl. 1, fig. 5. (North coast of Cayo Mégano Grande, north of Camagüey, Cuba).

Description. Shell reaching about 23 mm. (about 1 inch) in length, rather light in structure, nearly imperforate and strongly sculptured. Color a dull gray. Whorls 11 slightly convex. Nuclear whorls glass-like and very faintly costate. Spire extended forming a cone which extends to the summit from the body whorl. It is produced at an angle of 18° to 20°. Aperture subcircular to subovate. Outer lip thin and reflected. Parietal ridge very weak and not elevated but rather flattened on the parietal wall. Parietal tooth centered and rather small and extending back for nearly a full whorl. Columellar tooth rather small and extending back for at least a full whorl. Columella short. Umbilicus rimately formed but exceedingly shallow. Suture moderately indented. Axial sculpture consisting of numerous and irregular costae which number 12 to 14

on the body whorl. Spiral sculpture consisting of numerous incised lines which cut into the shell. This is somewhat variable, certain specimens are lacking these incised lines. Surface powdered with a fine shell material which usually lines up along the incised lines. Agglutinated sand grains present on live shells.

length	width	whorls					
22.8	7.5 mm.	11	Cayo	Mégano	Grande,	Camagüey,	Cuba
22.5	8.0	10½	"	"	"	"	"

Types. The holotype of this species is in the collection of Dr. Sanchez Roig, no. 1001 from the north coast of Cayo Mégano Grande, Camagüey, Cuba. Paratypes are in the Museo Poey and the Museum of Comparative Zoölogy, no. 187375.

Cerion (Umbonis) rehderi, new species

Plate 57, fig. 2

Description. Shell cylindrical, rather small, reaching 16 mm. (a little over $\frac{1}{2}$ inch) in length, rimately perforate and finely costate. Color a dull uniform gray, interior of aperture being a dull, creamy-brown. Whorls 9 to 10 and slightly convex. Spire extended, last 4 whorls nearly straight-sided, early 5 whorls forming a slight convex cone, the conic portion forming an angle of about 45° . Aperture subquadrate. Outer lip reflected but not turned backward. Columella short and straight. Parietal tooth centered, low and short. Columellar tooth low and extending back for nearly a full whorl. Umbilicus rimate, small and shallow. Sculpture: first 2 whorls glass-like and smooth, remaining whorls finely and axially costate, the costae numbering 20 to 25 on the body whorl. Spiral sculpture consisting of numerous and fine incised lines which do not cut into the crests of the axial costae. These spiral lines are generally finely powdered. There are a few agglutinated sand grains.

length	width	whorls	
26.3	5.9 mm.	10	Holotype
24.7	6.1	9	Paratype
23.5	5.9	9	Paratype

Types. Holotype, Museum of Comparative Zoölogy, no. 189032, from Jackline, 1 mile west of Conch Shell Point, Great Inagua, Bahama Islands. Paratypes, Museum of Comparative

Zoölogy, no. 189033; Museo Poey, Universidad de la Habana; United States National Museum; and the Academy of Natural Sciences, Philadelphia, from the same locality.

Remarks. In relationship, this species is nearest to *C. acuticostatum* Sanchez Roig from Cayo Mégano Grande, Camagüey, on the north coast of Cuba. It differs from this species in being far less conic (from the body whorl), and by possessing more numerous costae. It does not appear to be closely related to *C. turnerae* Clench and Aguayo from the north coast of Great Inagua. This last species is a little smaller, has more globose whorls and much fewer costae.

C. rehderi, so far as now known, is limited to this single locality on the south shore of Great Inagua. It was found associated with *C. dalli* Maynard, with no indication of any hybridization between the two species. In fact, this is one of the few known cases in which two separate elements of *Cerion* are known to exist in the same area without crossing.

This species is named for H. A. Rehder, Curator of Mollusks in the United States National Museum.

***Cerion* (*Umbonis*) *turnerae*, new species**

Plate 53, fig. 4-7

Description. Shell small, reaching about 15 mm. (about 3 5 inch) in length, solid, minutely perforate or rimate, strongly axially ribbed and finely threaded with spiral ridges. Whorls $8\frac{1}{2}$ to 9 slightly shouldered and moderately convex. Nuclear whorls smooth and then finely ribbed and with a little trace of spiral sculpture. General color a dull gray to faintly purplish, both axial ribs and minute spiral ridges whitish. Early three whorls forming an angle of 44° , later whorls nearly straight-sided. Aperture subcircular, holostomatous and more or less evenly flaring and slightly projecting beyond the body whorl. Mid-parietal wall supporting a well-defined tooth, columellar tooth absent. Lip flaring, simple and not developed into a collar. Suture indented but not well-defined. Axial sculpture consisting of strong costae, about 10 to 11 on the body whorl. Spiral sculpture consisting of 25 to 30 fine, blade-like ridges that are best developed on the forward side of the axial costae.

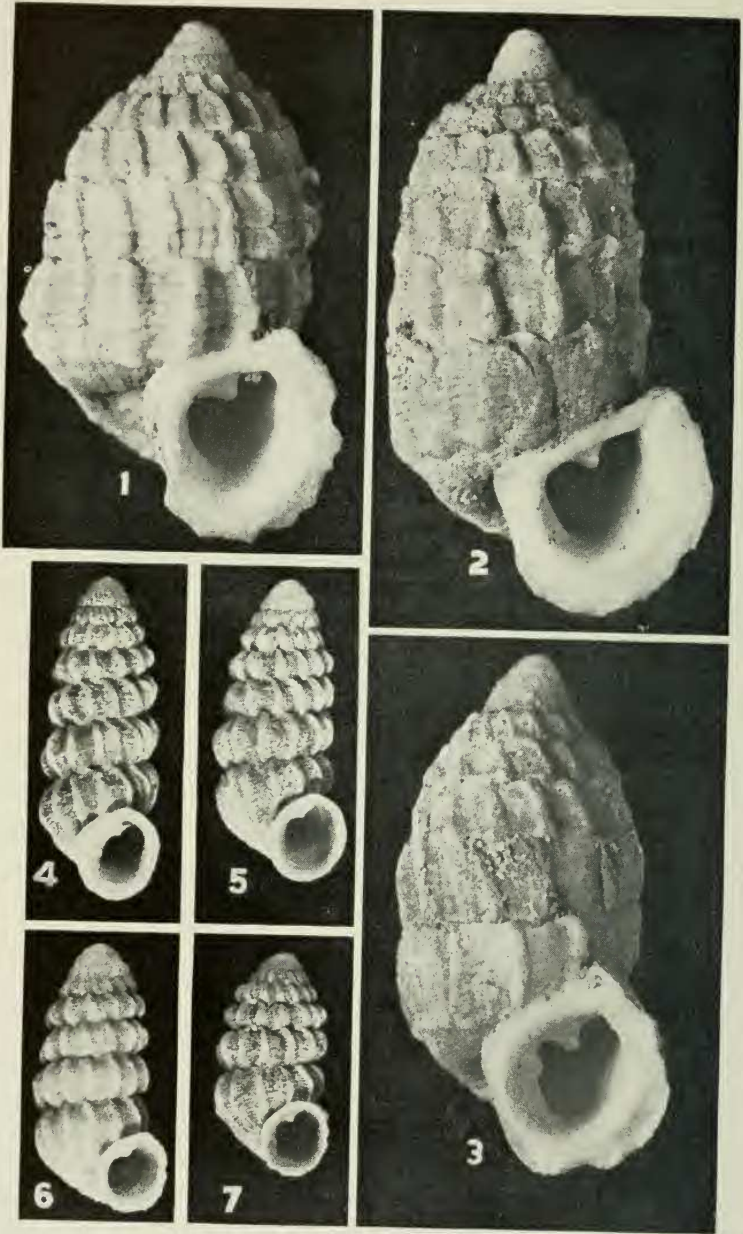


Plate 53

Fig. 1-3. *Cerion stevensoni* Dall, Wemyss, southeast of Simms, Long Island, Bahama Islands (about 3x). Fig. 4-7. *Cerion turnerac* Clench and Aguayo, Lydia Point, Great Inagua, Bahama Islands, holotype, fig. 5 (all about $2\frac{1}{2}$ x).

length	width	whorls	
14	6 mm.	9	Holotype
14.5	5.9	9½	Paratype
15	6.5	9½	Paratype
12.5	5.9	8	Paratype

Types. Holotype, Museum of Comparative Zoölogy, no. 184623 from Lydia Point, Great Inagua Island, Bahama Islands. R. A. McLean and B. Shreve collectors, July 1938. Paratypes in the Museum of Comparative Zoölogy, United States National Museum and the Museo Poey from the same locality and from Calm Cove and Canfield Bay collected by McLean and Shreve and a large series from south of North East Point and east of Salt Lagoon at deserted house collected by P. Bartsch, August 1930.

Remarks. This is the smallest species so far known in this group. It was very abundant at Lydia Point and at Ocean Bight near the Salt Lagoon. McLean, Shreve and Bartsch found it along about a 12 mile stretch of coast from Canfield Bay to near North East Point.

In general structure it appears to be nearest in relationship to *C. scalarinum* Pfeiffer from Gibara, Cuba. It does not appear to be at all closely related to *C. rehderi* Clench and Aguayo, the only other member of the subgenus *Umbonis* on Great Inagua.

This species is named for Ruth D. Turner, Research Assistant, Department of Mollusks, Museum of Comparative Zoölogy.

***Cerion (Umbonis) paucisculptum*, new species**

Plate 54, fig. 1-2

Description. Shell rimately perforate, strong, but rather light in structure, elongate, sculptured and reaching about 25 mm. (1 inch) in length. Whorls 10 to 10½, and only moderately convex. Color a dull gray to flat white. Spire conic and acutely convex, variable and produced at an angle of about 75°. Aperture subcircular. Parietal tooth small, centered and positioned well within the aperture. Columellar tooth small and also positioned well within the aperture. Outer lip reflected though not carried back as a collar. Parietal lip or ridge straight and well-developed in adult specimens. Suture but slightly in-

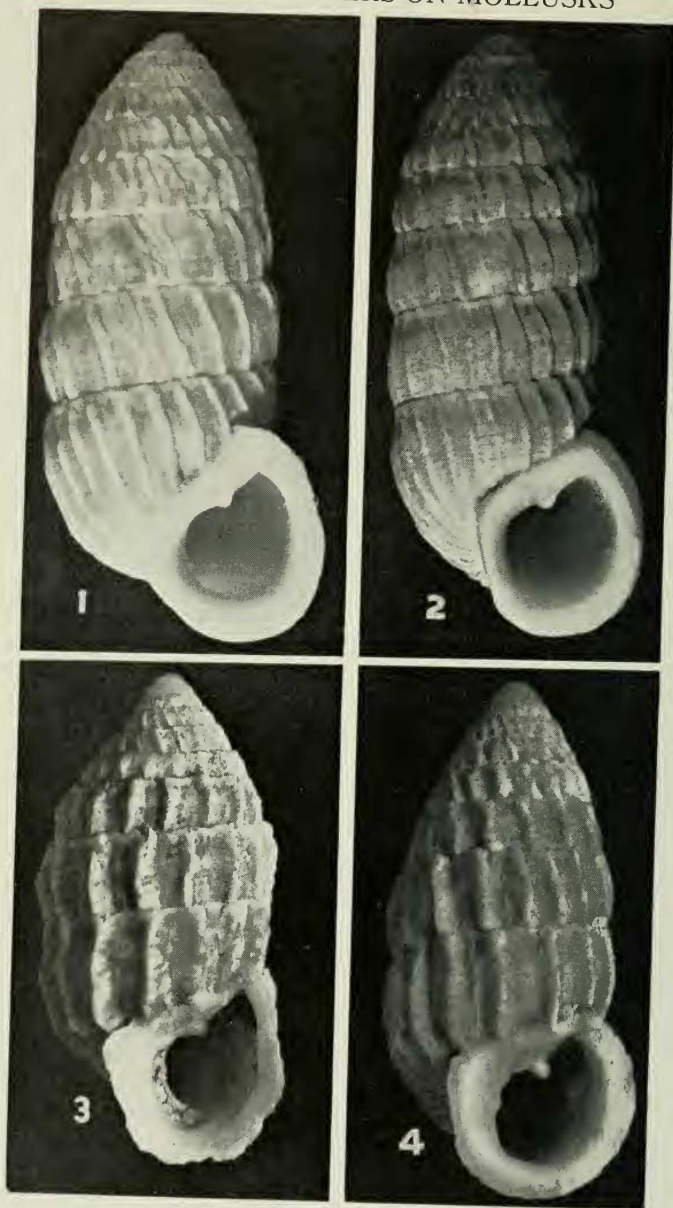


Plate 54

Fig. 1-2. *Cerion paucisculptum* Clench and Aguayo, Punta de Musica, Bahía de Samá, Banes, Cuba. Fig. 1. Holotype. Fig. 2. Paratype (both $3\frac{1}{2}x$). Fig. 3-4. *Cerion felis* Pilsbry and Vanatta, Turtle Cove, Cat Island, Bahama Islands ($3x$).

dented. Sculpture consisting of numerous axial costae, variable as to height and number. There are 20 costae on the body whorl of the holotype. On certain specimens these costae are nearly obsolete on the last or body whorl. Spiral sculpture consisting of numerous fine and incised spiral grooves. Early $2\frac{1}{2}$ whorls very finely and axially costate.

length	width	whorls	
24.8	11.5 mm.	$10\frac{1}{2}$	Holotype
25	9.5	$10\frac{1}{2}$	Paratype
24	8.5	$10\frac{1}{2}$	"
23	9.0	10	"
22.3	9.0	10	"

Types. Holotype, Museum of Comparative Zoölogy, no. 192204, from Punta de Musica, Bahía de Samá, Banes, Oriente, Cuba, A. R. Quiñones, collector, 1947. Additional paratypes in the Museum of Comparative Zoölogy, the Museo Poey, no. 12905, the United States National Museum and the Museum of Zoology, University of Michigan and the collection of A. R. Quiñones.

Remarks. This species is related to both *scalarinum* and *scalarinum sueyrasi*. It differs from *scalarinum* in being far less conic and from both by having a material reduction in size and coarseness of the axial costae.

It is known only from the type locality.

Cerion (Umbonis) sisal, new species

Plate 57, fig. 3

Description. Shell about 32 mm. ($1\frac{1}{4}$ inches) in length, cylindrical, with a short tapering spire, rather heavy in structure and strongly sculptured. Color a dull light-gray, the costae being the same color. Whorls 11, slightly convex, the nuclear whorls opaque, somewhat glass-like in appearance and faintly axially costate. Spire extended, parallel-sided for about four whorls above the aperture, then conic to the summit. It is produced at an angle of about 80° . Aperture subquadrate in outline and somewhat flaring. Outer lip reflected. Parietal ridge well-developed making the aperture holostomatous. Parietal tooth centered, small and short. Columellar tooth small and relatively inconspicuous. It extends backwards for about one

whorl. Columella short and nearly straight. Umbilicus rimate and rather shallow. Suture moderately impressed. Sculpture consisting of numerous, somewhat irregular, robust, axial costae which number 13 to 17 on the body whorl. Spiral sculpture consisting of numerous deeply incised lines or threads which are cut into the shell even over the axial costae. In the present series which were collected alive, there is no trace of the powdered element nor the tendency to agglutinate minute sand grains to the shell.

length	width	whorls	
32	14 mm.	11	Holotype
32.5	14	11	Paratype
31.5	13.6	11	"
29.5	14	11	"

Types. Holotype, Museum of Comparative Zoölogy, no. 181992, from east side Boca de Mosquito, Mariel, Pinar del Rio, Cuba. Aguayo, Clench, Howell and Turner collectors, June 1949 and again in July 1950. Paratypes in the Museum of Comparative Zoölogy, Museo Poey, United States National Museum and the Museum of Zoölogy, University of Michigan.

Remarks. This species is remarkably uniform in both shape and size. It is very possible that it is a hybrid element which has reached some sort of stability in both form and structure. The differences are rather marked between this form and *johnsoni* which exists on the opposite side of Boca de Mosquito. It is possible that repeated introductions of *johnsoni* have brought about profound changes in the original *Cerion* stock at this limited locality. To the east of Boca de Mosquito the *johnsoni* characters become less and less pronounced, particularly in the reduction and extent of the incised lines and the less straight-sided appearance of the early whorls.

***Cerion (Umbonis) asperum* Maynard and Clapp**

Plate 56, fig. 1-2

Strophioops aspera Maynard and Clapp 1920, Appendix to Records of Walks and Talks with Nature, West Newton, Massachusetts, **10**, p. 116, pl. 1, fig. 9-10 (southern end of Great Guana Cay [Exuma Group] Bahama Islands).

Strophioops scalariformis Maynard and Clapp 1920, Appendix to Records of Walks and Talks with Nature, West Newton, Massachusetts, **10**, p. 116, pl. 1, fig. 5-6 (south end of Great Guana Cay [Exuma Group] Bahama Islands).

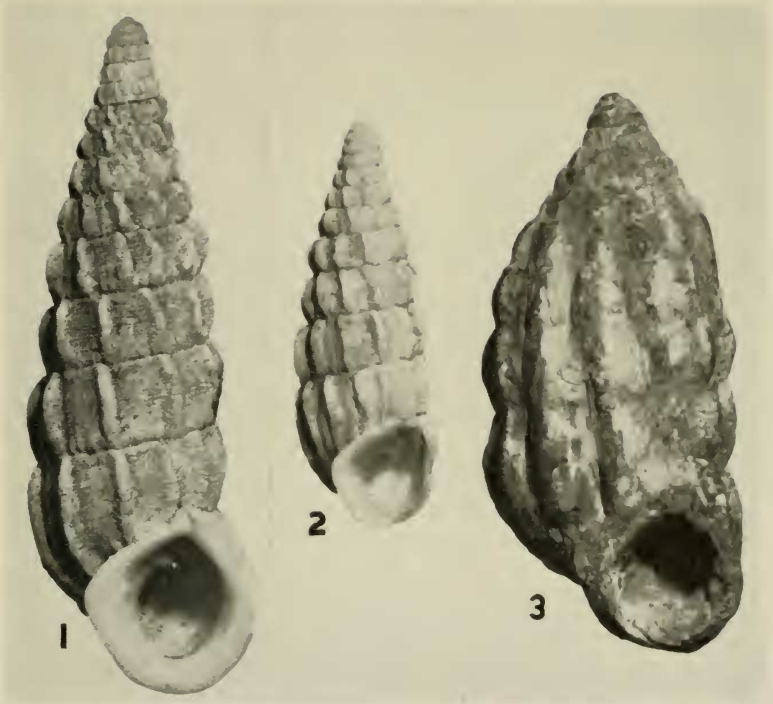


Plate 55

Fig. 1. *Cerion johnsoni* Pilsbry, $1\frac{1}{2}$ miles east of the lighthouse, Mariel, Cuba (about 2.4x). Fig. 2. *Cerion faxoni* Maynard, Cuba (= *C. johnsoni* Pilsbry) paratype (about 1.8x). Fig. 3. *Cerion perantiquum* Maynard and Clapp, south end of Great Guana Cay, Exuma Group, Bahama Islands, holotype (about 2.3x).

Description. Shell about 30 mm. (about $1\frac{1}{4}$ inches) in length, attenuated with a tapering spire, rather light in structure and strongly sculptured. Color a uniform dull grayish-white. Whorls 12, moderately convex, nuclear whorls opaque, glass-like; first $1\frac{1}{2}$ smooth, the next $1\frac{1}{2}$ with fine and numerous axial costae. Spire extended and tapering from the body whorl. It forms an angle of about 27° . Aperture subcircular to subquadrate. Parietal lip nearly straight and appressed to the body whorl, occasionally built forward making the aperture holostomatous. Parietal tooth centered and rather large, though not extending within the aperture. Columellar tooth very inconspicuous but extending within for nearly a full whorl. Palatal lip reflected and usually duplex. Columella short and arched. Umbilicus subcircular and open for a short distance within. Suture rather well-defined. Sculpture consisting of numerous and coarse axial costae, numbering 10-12 on the body whorl. Spiral sculpture consisting of numerous fine, incised striae or lines which in addition possess the fine powdered appearance. Nuclear whorls opaque, smooth and glass-like.

length	width	whorls	
25	11 mm.	12	Holotype of <i>asperum</i>
28.5	11	13	Paratype of <i>asperum</i>
30	12.3	12	Holotype of <i>scalariforme</i>
27	11.5	12	Paratype of <i>scalariforme</i>

Types. Holotype of *C. asperum* Maynard and Clapp, Museum of Comparative Zoölogy, no. 76176 and the holotype of *C. scalariforme* Maynard and Clapp, Museum of Comparative Zoölogy, no. 76180, both from the south end of Great Guana Cay, Exuma Group, Bahama Islands, C. J. Maynard, collector.

Remarks. Both *asperum* and *scalariforme* are but separate colonies of the same species. Maynard (loc. cit.) described several species of *Cerion* from the southern end of the Great Guana Cay, Exuma Group, Bahama Islands. Many of these show hybrid elements and completely intergrade.

In relationship this present form is nearest to *Cerion victor* Torre, a species occurring at the extreme eastern end of Cuba near Cabo Maisí. They differ in that *C. victor* is somewhat larger and lacks the duplex character of the palatal lip which is usually present in *asperum*.

Cerion asperum processum *Maynard and Clapp*

Plate 56, fig. 3-4

Strophioops processa Maynard and Clapp 1920, Appendix to Records of Walks and Talks with Nature, West Newton, Massachusetts, **10**, p. 116, pl. 1, fig. 7-8 (south end of Great Guana Cay, Bahama Islands).

Strophioops intentata Maynard and Clapp 1920, Appendix to Records of Walks and Talks with Nature, West Newton, Massachusetts, **10**, p. 118, pl. 2, fig. 6-7 (south end of Great Guana Cay, Bahama Islands).

Description. Shell reaching about 24 mm. (1 inch) in length, rather solid, strongly sculptured and umbilicate. Color probably a dull white. Whorls $10\frac{1}{2}$ to 11, moderately convex, the first 8 whorls forming a convex summit. Spire extended, the convex summit forming an angle of about 55° . Aperture subquadrate to subcircular. Outer lip reflected, thickened and slightly duplex. Inner lip nearly straight and built forward to form a ridge. Columella short and arched. Columellar tooth small but well-developed and extending back for a full whorl. Parietal tooth centered and large but rather short. Suture slightly indented. Sculpture consisting of rather coarse axial costae which number 14 to 18 on the body whorl. Spiral sculpture of exceedingly fine incised lines. Agglutinated sand grains present, though rare. Nuclear whorls glass-like and smooth for the first $1\frac{1}{2}$ whorls then finely costate for the next whorl.

length	width	whorls	
20	8.8 mm.	$10\frac{1}{2}$	Holotype, <i>intentatum</i>
24.2	9.8	$10\frac{3}{4}$	Holotype, <i>processum</i>
22	9.2	$10\frac{1}{2}$	Paratype, <i>intentatum</i>
19.5	8.8	10	Paratype, <i>processum</i>

Types. Holotype of *C. intentatum*, Museum of Comparative Zoölogy, no. 76305; holotype of *processum*, Museum of Comparative Zoölogy, no. 76148. The type locality is the south end of Great Guana Cay, Exuma Group, Bahama Islands. Additional paratypes in the Museum of Comparative Zoölogy and the United States National Museum.

Remarks. Both these forms were found in closely adjoining territory. They appear to be a hybrid element exhibiting well-developed characters of the *scalarinum* complex. All specimens contained in these two colonies were collected dead.

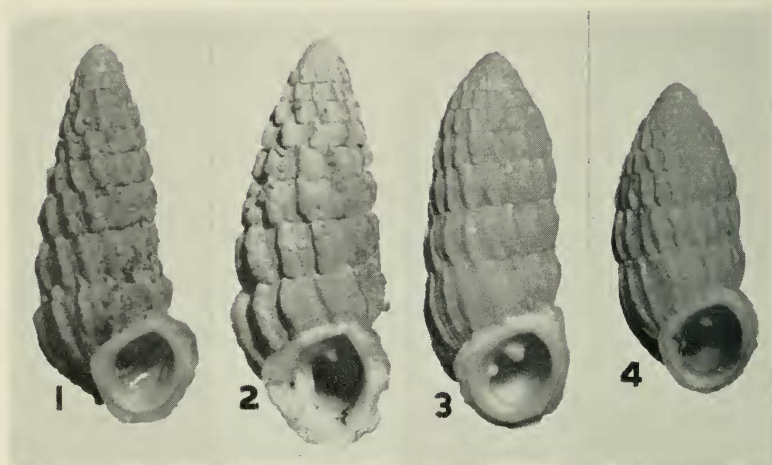


Plate 56

Fig. 1. *Cerion asperum* Maynard and Clapp, south end of Great Guana Cay, Exuma Group, Bahama Islands, holotype (2x). Fig. 2. *Cerion scalariforme* Maynard and Clapp, south end of Great Guana Cay, Exuma Group, Bahama Islands, holotype (1.8x). Fig. 3. *Cerion processum* Maynard and Clapp, south end of Great Guana Cay, Exuma Group, Bahama Islands, holotype (2x). Fig. 4. *Cerion intentatum* Maynard and Clapp, south end of Great Guana Cay, Exuma Group, Bahama Islands, holotype (2x).

Cerion (Umbonis) mutatorium *Maynard and Clapp*
Plate 57, fig. 1

Strophioops mutatoria Maynard and Clapp 1920, Appendix to Records of Walks and Talks with Nature, West Newton, Massachusetts, **10**, p. 116, pl. 1, fig. 3-4 (south end of Great Guana Cay [Exuma Group] Bahama Islands).

Description. Shell rather solid, reaching about 26 mm. (1 inch) in length, rimately perforate and rather weakly costate. Color probably a dull white or gray (all specimens were dead when collected). Whorls $10\frac{1}{2}$ to 12, slightly convex and slightly offset. Spire extended, the last three whorls being nearly straight-sided, the early whorls forming a somewhat convex cone which is produced at about 39° . Aperture subcircular. Outer lip reflected and slightly turned backward. Parietal lip straight, thickened, but not built forward materially. Columella short and arched. Parietal tooth centered, fairly large but short. Columellar tooth small and very short. Umbilicus rimately formed, short and shallow. Suture well-defined but shallow. Sculpture: first $1\frac{1}{2}$ to 2 whorls glass-like and smooth, remaining whorls faintly and irregularly costate with a few specimens showing fairly strong costae on the body whorl. These number about 17 on the last whorl, though in many specimens they are very irregular and number far less. Spiral incised lines numerous. Nuclear whorls $2\frac{1}{2}$, smooth and glass-like.

length	width	whorls	
25.5	9.2 mm.	12	Holotype
24.9	8.4	$10\frac{1}{2}$	Paratype
25.2	9.4	$11\frac{1}{2}$	"
22.5	8.5	11	"

Types. Holotype, Museum of Comparative Zoölogy, no. 76234 from the south end of Great Guana Cay, Exuma Group, Bahama Islands. Paratypes from the same locality in the Museum of Comparative Zoölogy, the Museo Poey and the United States National Museum. C. J. Maynard, collector.

Remarks. In this form there has been a material reduction in the axial costae, certain specimens being nearly smooth. In a measure this species simulates *C. palmeri* Sanchez Roig from the north coast of Cayo Romano, Camagüey, Cuba, which has no axial costae at all and yet is probably a derivative of

C. scalarinum Pfeiffer and Gundlach from the Cuban coast, as *mutatorium* Maynard and Clapp is from *asperum* Maynard and Clapp from Great Guana Cay.

Cerion (Umbonis) felis Pilsbry and Vanatta

Plate 54, fig. 3-4

Cerion (Maynardia) felis Pilsbry and Vanatta 1895, Proc. Acad. Nat. Sciences, Philadelphia, p. 206 (Cat Island, Bahama Islands).

Cerion (Strophiops) felis Pilsbry and Vanatta 1896, Proc. Acad. Nat. Sciences, Philadelphia, p. 322, pl. 11, fig. 29.

Cerion felis Pilsbry and Vanatta 1902, Manual of Conchology (2), **14**, p. 221, pl. 44, fig. 72-73.

Description. Shell reaching 30 mm. (about 1¼ inches) in length, rather solid, rimately perforate and strongly sculptured. Color a rather dark gray, the axial costae being somewhat lighter. Whorls 11, moderately convex. Spire extended, cylindrical to about the fourth whorl above the aperture, then convexly conic to the apex and produced at an angle of about 55°. Aperture subquadrate. Outer lip reflected, somewhat expanded and rather thin. Parietal ridge strong and nearly straight making the aperture holostomatous. Parietal tooth centered and extending back for a very short distance. Columellar tooth small, relatively inconspicuous and extending back for nearly a full whorl. Columella short and nearly straight. Umbilicus rimately formed and shallow. Suture moderately impressed. Sculpture consisting of numerous, irregular axial costae numbering 14 to 18 on the body whorl. Spiral sculpture consisting of numerous incised lines which cut into the shell, even over the axial costae. Nuclear whorls very finely costate. Powdered element light and seen best along the edges of the incised lines. Agglutinated sand grains present though mainly restricted to the umbilical area.

length	width	whorls				
30	12.5 mm.	11	Turtle Cove,	Cat Island		
29.5	12.7	10½	"	"	"	"
27	13.1	10¼	"	"	"	"
23.2	10.8	10	"	"	"	"

Types. The type series of this species is in the Academy of Natural Sciences, Philadelphia from Cat Island, Bahama Islands.

Remarks. *Cerion felis* appears to be nearest in its relationship to *C. stevensoni* Dall from Long Island. See remarks under this latter species.

Cerion felis is probably a hybrid element that has retained most of the general characters of the *scalarinum* complex and yet shows certain characters of *C. glans*, many colonies of which exist on Cat Island.

Records. BAHAMA ISLANDS: Turtle Cove, 4 miles N.N.E. of The Bight, Cat Island, Bahama Islands (MCZ).

***Cerion (Umbonis) stevensoni* Dall**

Plate 53, fig. 1-3

Cerion stevensoni Dall 1900, *Nautilus* **14**, p. 65 (Long or Berry Island, Bahama Islands); Pilsbry 1902, *Manual of Conchology* (2) **14**, p. 220, pl. 44, fig. 70-71; Dall 1905 [in] *The Bahama Islands*, Geographic Society Baltimore, p. 40 (Rum Cay not Long Island); Clench 1934, *Proc. Boston Soc. Nat. Hist.* **40**, p. 209; Clench 1937, *Nautilus* **51**, p. 23, pl. 3, fig. 8-10; Clench 1940, *Memorias Soc. Cubana Hist. Nat.* **14**, p. 12.

Description. Shell rather short and stout, reaching about 29 mm. (about 1 inch) in length, umbilicate and coarsely sculptured. Color a dull somber gray. Whorls $9\frac{1}{2}$ to 10, nearly straight-sided and irregular. Spire extended, the last 4 whorls of nearly equal width, the earlier whorls abruptly tapering to form an irregular cone, the conic portion produced at an angle of about 90° . Aperture subquadrate and holostomatous. Outer lip thin and reflected but not turned back. Parietal area nearly straight and continuous as a thin reflected lip, not thickened as a parietal ridge. Columella short and arched. Parietal tooth centered, well-developed and short, columellar tooth inconspicuous; neither follows back for more than one-fourth of a whorl. Umbilicus fairly large and deep. Suture very shallow and not well-defined. Sculpture: nuclear whorls smooth, white and opaque, next 3 to 4 whorls finely costate, remaining whorls strongly costate, the costae numbering 12 to 13 on the body whorl. Spiral sculpture consisting of numerous and rather fine incised lines that cut in even over the crests of the costae. Surface powdered, particularly along the edge of the incised lines. Agglutinated sand grains numerous and occasionally incorporated into the body of the shell.

length	width	whorls					
29	15 mm.	10	Wemyss, Long Island, Bahama Islands				
25.1	15.4	9	" " " " "				
24.7	15.5	10	" " " " "				

Types. Holotype, United States National Museum, no. 107833, from Long Island, Bahama Islands. Type locality selected (Clench 1940, p. 12) Wemyss, Long Island, Bahama Islands. In the references above (1905, p. 40) Dall changed the locality from Long Island to Rum Cay but this was in error.

Remarks. This is a rather short and stout species possessing very coarse sculpture. In relationship it appears nearest to *C. felis* Pilsbry and Vanatta from the central area of Cat Island. From *felis*, this present form differs by being proportionately wider, having coarser sculpture and being openly umbilicate.

Records. BAHAMA ISLANDS: Wemyss, 7 miles S.E. of Simms, Long Island (MCZ).

***Cerion (Umbonis) shrevei*, new species**

Plate 57, fig. 4

Description. Shell rimately perforate, solid, elongate, sculptured and reaching about 33 mm. ($1\frac{1}{4}$ inches) in length. Whorls 10 to 11, moderately convex and slightly angled. Color a dull gray. Spire broadly conic, moderately convex at the summit, variable, and produced at an angle of about 70° . Aperture sub-circular to subovate. Parietal tooth rather large and centrally located. Columellar tooth small and positioned well within the aperture. Outer lip reflected backwards, though only shortly so. Parietal or inner lip consisting of a strongly developed straight ridge. Suture but slightly indented. Sculpture consisting of numerous and fine axial costae, variable as to their development and number. There are 65 on the body whorl of the holotype. Spiral sculpture consisting of numerous and fine incised lines; though variable they generally cut through the axial costae. First whorl smooth, the next finely axially costate, the following whorls more strongly axially costate.

length	width	whorls	
28	12.8 mm.	$10\frac{1}{2}$	Holotype
31	12	$10\frac{1}{2}$	Paratype
33.2	13.5	11	"
27.1	12.5	$10\frac{1}{2}$	"
25.5	12	10	"

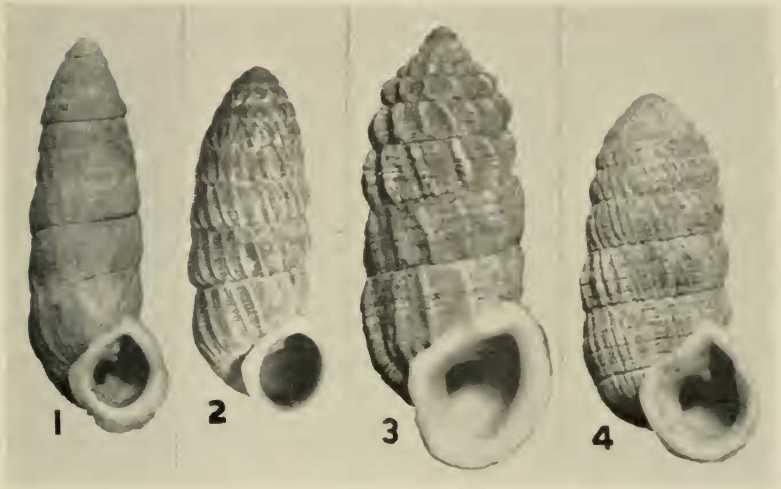


Plate 57

Fig. 1. *Cerion mutatorium* Maynard and Clapp, south end of Great Guana Cay, Exuma Group, Bahama Islands, holotype (2x). Fig. 2. *Cerion rehderi* Clench and Aguayo, 1 mile west of Conch Shell Point, Great Inagua, Bahama Islands, holotype (2.8x). Fig. 3. *Cerion sisal* Clench and Aguayo, east side of Boca de Mosquito, Mariel, Cuba, holotype (1.8x). Fig. 4. *Cerion shrevei* Clench and Aguayo, Northwest Point, Little Inagua, Bahama Islands, holotype (1.8x).

Types. Holotype, Museum of Comparative Zoölogy, no. 192287, from near Northwest Point, Little Inagua Island, Bahama Islands. R. A. McLean and B. Shreve, collectors, 1938. Additional paratypes in the Museum of Comparative Zoölogy, the Museo Poey, the United States National Museum and the Museum of Zoölogy, University of Michigan.

Remarks. This species does not seem to be closely related to any other in the *scalarinum* complex. The axial costae are fine and numerous, the spiral incised lines are coarse and rather deeply cut into the shell. It is, perhaps nearest to *C. palmeri* Sanchez Roig, at least in its shell characters. It differs in being less attenuate and in having both the axial costae and incised lines much stronger.

Records. BAHAMA ISLANDS: near Northwest Point, Little Inagua (MCZ); Northwest Point and halfway between West and South Points, Little Inagua (both USNM).

***Cerion (Umbonis) palmeri* Sanchez Roig**

Plate 52, fig. 5-6

Cerion palmeri Sanchez Roig 1948, Revista de la Soc. Malacologica "Carlos de la Torre" **6**, p. 69, pl. 1, fig. 6 (Cayo Romano (22°24' N.; 76°6' W.) [Cama-güey] Cuba).

Description. Shell rather small and narrow, reaching 19.3 mm. (about $\frac{3}{4}$ inch) in length, rimately perforate, rather light in structure and finely sculptured. Color a dull and uniform grayish-white to a light straw-yellow, sometimes mottled or marbled. Whorls $10\frac{1}{2}$ and slightly convex. Spire extended, tapering moderately from the body whorl to the first three whorls, these latter forming a rather rounded summit. Aperture subquadrate. Outer lip slightly expanded. Inner or parietal lip straight and thickened slightly to form a very low ridge. Columella short and straight. Parietal tooth centered, low and short. Columellar tooth small and rather inconspicuous, extending within for a full whorl. Umbilicus rimately formed and very small. Suture slightly indented. Sculpture: first $1\frac{1}{2}$ whorls smooth, remaining whorls with numerous, exceedingly fine and slightly oblique costae which become rather obscure on the body whorl. Spiral sculpture consisting

of numerous, fine, incised lines. Live specimens show the fine powdered element to be present but not abundant.

length	width	whorls	
16.3	5.4 mm.	—	Holotype
19.3	6.5	—	Paratype
18	5.8	10½	"

Types. Holotype, collection of M. Sanchez Roig, no. 1002. Paratypes in the Museo Poey and the Museum of Comparative Zoölogy, no. 128779 and 192167 from Cayo Romano, Camagüey, Cuba (N. Lat. 22°24'; W. Long. 76°6'); collected by R.H. Palmer.

Remarks. This is the most diminutive species in *Umbonis* on the Cuban coast. It represents a reduction in size and in all sculptural characters.

In relationship it is probably closely allied to *C. acuticostatum* Sanchez Roig, the relationship being more real than apparent. *Cerion acuticostatum* is a strongly and axially costate shell while *palmeri* is nearly smooth.

* * * *

Notes

The two following species are not members of the subgenus *Umbonis* but are included here as both possess the spiral incised lines. This may have resulted from hybridization with elements in the *scalarinum* complex at some time in the past.

Cerion glans scalarinoides Plate

Cerion glans scalarinoides Plate 1907, Archiv für Rassen-und Gesell. Biologie 4, p. 595, pl. 4, fig. f (Green Cay, Tongue of the Ocean, Bahama Islands [N. Lat. 24°2'; W. Long. 77°11']).

Remarks. This species is in the *glans* complex but does possess a series of rather deeply incised spiral lines. In this case it may mean that there has been an introduction of some

scalarinum element, possibly from Great Exuma Island, which has completely integrated with the original *Cerion* on Green Key, the evidence remaining being these incised lines. This same possibility has apparently produced the occurrence of incised lines on two Cuban species which exist in the vicinity of *scalarinum* elements.

***Cerion perantiquum* Maynard and Clapp**

Plate 55, fig. 3

Strophioops perantiqua Maynard and Clapp 1920, Records of Walks and Talks with Nature, West Newton, Massachusetts, **10**, appendix p. 115, pl. 1, fig. 1-2 (south end of Great Guana Cay, Bahama Islands).

Remarks. This species was based upon a series of "fossil" shells. According to Maynard, he collected these in the red earth of a cultivated field and all may be quite recent. Two specimens show traces of spiral lines. Very probably these are the remnant of a hybrid colony, possibly a cross between the *scalarinum* element and a member of the *glans* complex. All of the specimens are in very poor condition.

length	width	whorls	
31.8	15 mm.	11	Holotype

Types. Holotype, Museum of Comparative Zoölogy, no. 187537, from the south end of Great Guana Cay, Exuma Group, Bahama Islands. Additional paratypes (all broken or worn) in the Museum of Comparative Zoölogy and the United States National Museum.